

# ***THE B&O MODELER***



Volume 2, Number 4

JULY/AUGUST 2006



**A MODERNIZED, STREAMLINED 10-1-2 FOR THE B&O  
BUILDING WEST CUMBO TOWER IN HO SCALE**

A publication of the B&O Railroad Historical Society (B&ORRHS) for the purpose of disseminating B&O modeling information. Copyright © B&ORRHS – 2005, 2006 – All Rights Reserved. May only be reproduced for personal use. Not for sale other than by the B&ORRHS.

Editor – Bruce D. Griffin at [bruce\\_griffin@earthlink.net](mailto:bruce_griffin@earthlink.net)  
Associate Editor – Greg LaRocca at [larocca3@zoominternet.net](mailto:larocca3@zoominternet.net)  
Did You See It? Editor – Ross Pollock at [info@borhs.org](mailto:info@borhs.org)  
Model Products News Editor - VACANT  
Modeling Committee Chair – Bill Barringer at [barbllsn@aol.com](mailto:barbllsn@aol.com)

Manuscripts and photographs submitted for publication are considered to be gratis and no reimbursement will be made to the author or the photographer(s) or his/her representative(s). Please contact the Editor with comments and corrections and for submission guidelines. Statements and opinions made are those of the authors and do not necessarily represent those of the B&ORRHS.

Cover Photos – Top, 10-1-2 – Greg LaRocca photo. Bottom, West Cumbo Tower – Jeff Hanke photo.

---

## AN INVITATION TO JOIN THE B&O RAILROAD HISTORICAL SOCIETY

The Baltimore and Ohio Railroad Historical Society is an independent non-profit educational corporation. The Society's purpose is to foster interest, research, preservation, and the distribution of information concerning the B&O. Its membership is spread throughout the United States and numerous foreign countries, and its scope includes all facets of the B&O's history. Currently the Society has over 1600 registered members.

Members regularly receive a variety of publications offering news, comments, technical information, and in-depth coverage of the B&O and its related companies. Since 1979, the Society has published a quarterly magazine, *The Sentinel*, dedicated to the publication of articles and news items of historical significance. Other Society publications include monographs, calendars, equipment rosters, and reprints of original B&O source material. Their

purpose is to make otherwise unobtainable data available to the membership at reasonable cost.

Membership in the Society is a vote of support and makes all of the Society's work possible. It provides those interested in the B&O with a legitimate, respected voice in the railroad and historical communities. By working together, B&O fans are able to accomplish much more than by individual efforts. No matter how diverse your interests or how arcane your specialty, others share your fascination with America's most historic railroad. We invite your participation. Several classes of [annual memberships](#) are available, Regular memberships are only \$35.00. If you would like to join, click [here](#) to fill out our [membership application](#), print a copy and mail it to:

**B&ORRHS**  
**ATTN: Membership**  
**P.O. Box 24068**  
**Baltimore, MD 21227-0568**

---

## FROM THE ASSOCIATE EDITOR

### Uncle Dan'l Wants You!

What's in a title? Take a moment and look at the title of this electronic magazine (or "e-zine"): *B&O Modeler*. Not *Great B&O Modeler* or *Perfect B&O Modeler* or even *B&O Expert Modeler*. No, it is simply *B&O Modeler*, and there's a reason for that. Even if all you've done is taken an Athearn boxcar, painted it in a more correct shade of boxcar red, and applied decals to accurately duplicate the number and lettering of a real B&O boxcar, then you are a B&O modeler. You don't need to be doing great, or perfect, or, heaven forbid, expert models. All you

need is a desire to duplicate the B&O in miniature, and you are a B&O modeler. And, if you are one, then we need you.

We need you, because we need to hear from more than the two editors of this e-zine. We need to hear from more than the usual suspects, Elliott, Chapman, and Hom.,. We need you because we want to show the full range of B&O modeling that is out there, from the 1870's to the 1970's and before and beyond. We need you because we want *B&O Modeler* to be a

vital, vibrant resource for the B&O modeling community, and you should too.

Writing an article for *B&O Modeler* is easy. You don't need to write English with the flair and drama of a Shakespeare to do so. Imagine for a moment that you've had the "guys" over to work on your layout, and after the work session, you all go up to the dining room for coffee, cheese and crackers, and conversation. You put down on the table your newly finished, kitbashed EM-1, and the guys say, "How'd you do that?!" And you explain it to them. You point to each area of the engine you modified, and describe the process of changing it into Eddystone's and the B&O's finest. Now, translate that process to paper. Just write the way you would talk. How'd I modify the smokebox? Here's how. Continue in that vein, and before you know it you'll have an article. But, should you have difficulties translating what you would say onto paper, Bruce and I stand ready and willing to work with you, no matter what your writing ability is, to get your models onto the pages of *B&O Modeler*. If all you can provide are general notes on what you've done, that's fine, we can take it from there. You don't need to show step-by-step photos of the model under construction either; close-ups of the finished model showing each area of interest are good enough.

Ah, there's the thing that holds back more modelers from writing articles than anything else, photos.

First, you don't need a digital camera. Most places that develop film can put your print photos on CD for you. And once they are on CD, you can save them to disk and email them to us. So, if you are an accomplished film photographer, you're all set. If you do have a digital camera, it doesn't have to be a digital SLR. Even with a basic digital camera, you needn't worry about light compatibility with film type, and most digital cameras have a "macro" function which will allow you to take close-ups of your model. As far as getting the images into the size and format we like for publication, that's no problem, if you don't know how to do those things, I can take your raw images, and reformat them to the correct size and file type. In short, there is no reason not to contribute to *B&O Modeler*.

As a final thought, Harry Meem in our sister publication, *The Sentinel*, just wrote a wonderful editorial on getting involved to keep the Society and B&O history alive. If you can't or don't want to do any of the things he suggests, may I suggest that modeling is a way of keeping the B&O alive, and is a perfectly acceptable answer to Harry's call to arms.

In effect, Harry's, and this, editorial, are an allegorical question from the greatest of B&O's presidents, "Uncle Dan'I" Willard, saying he needs YOU. How are YOU going to respond?

*Greg LaRocca*  
*Ellwood City, PA*

---

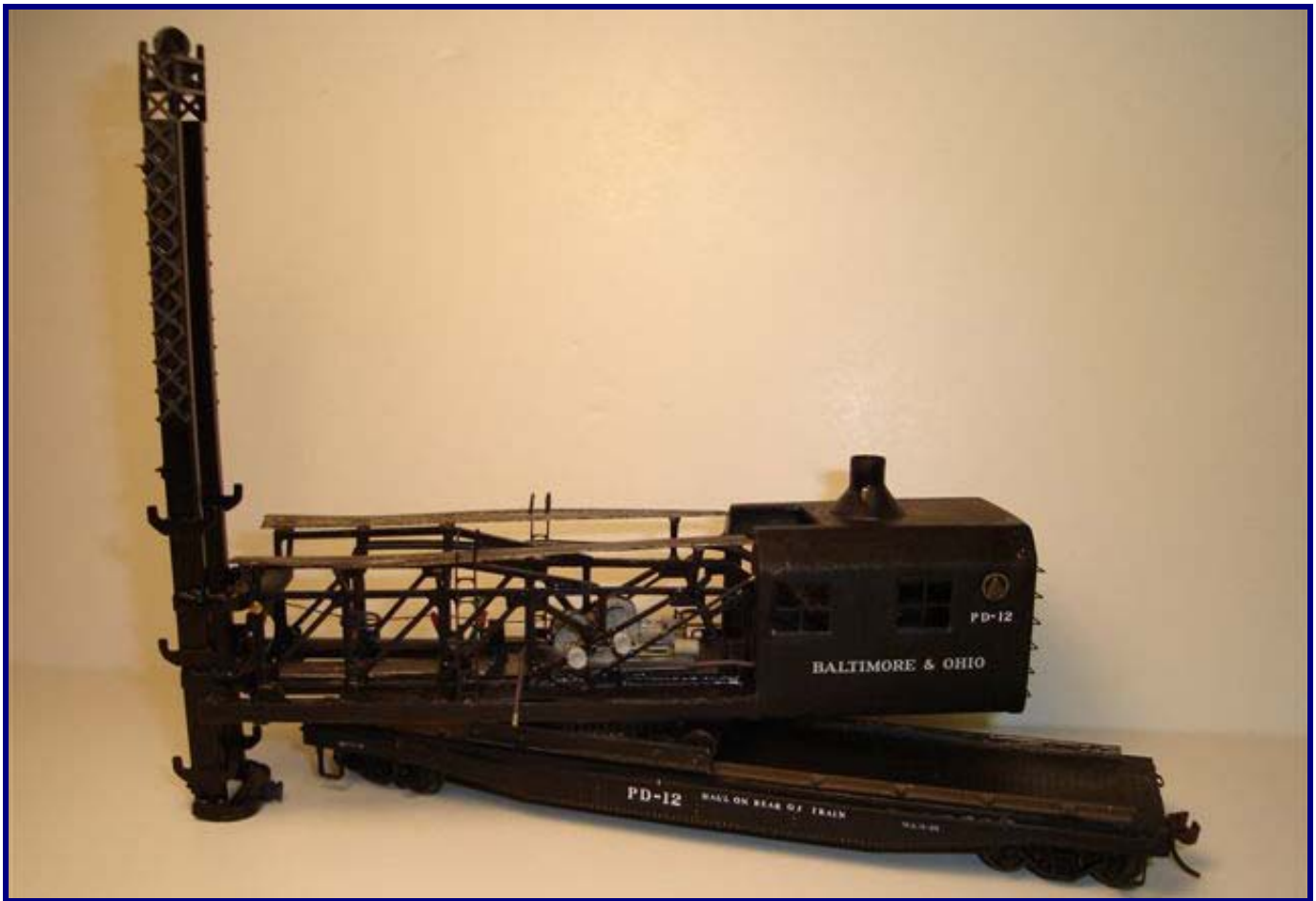
## NEWS FROM THE COMPANY STORE

BY GEORGE STANT

Why should you become a member of the Baltimore and Ohio Railroad Historical Society? Besides belonging to one of the finest railroad organizations in existence, you will also get some nice discounts on the multitude of items that we sell through our Company Store. For example as a Society member, you can save up to 20% on most books over the price we charge to the general public. And on our models, you can save from between 10% and 15%, more with some of the specials that we send out to members.

The same goes for the more than 175 reprints of manuals, track plans, and other documents taken from B&O historical records. And remember the profits from these sales go directly back to the Society's ongoing preservation efforts.

If you want to learn more about joining the Society, make sure you read "An Invitation to Join the B&O Railroad Historical Society" earlier in this edition of *The B&O Modeler*.



Chris Tilley's Scratchbuilt HO Scale Pile Driver, PD-12. Chris Tilley Photograph.

## ANNUAL CONVENTION OCTOBER 5-8, 2006

The Officers and Directors of the Society invite you to visit the Parkersburg, West Virginia area during our convention weekend. A full schedule of events has been planned to acquaint you with the B&O operations, facilities and history in this area, including a tour of the St Louis mainline from Salem to Parkersburg, the B&O Parkersburg high and low yards and former station sites, the B&O bridges over the Ohio, Little Kanawha and Muskingum Rivers, the Degussa North America Carbon Black plant, the B&O in Marietta, OH and a guided tour of the Parkersburg Oil and Gas Museum.

Parkersburg, WV and Marietta, OH have attractions for a family weekend vacation. In downtown Parkersburg, the Blennerhassett Regional Museum of History and the Oil and Gas Museum are within a block of each other. The Parkersburg Art Center has exhibits and is located four blocks from the other museums. The first museum houses a regional history

collection that begins with artifacts and displays of the Indians, dating back to 9,000BC and the history displays continue to Parkersburg in the 1920s. A section also covers the history of the Blennerhassett family and Blennerhassett Island. One can then walk two blocks to the Ohio River and ride a stern wheel boat to Blennerhassett Island and visit the mansion and state park. In addition, the downtown area has a number of significant historic houses. Twelve miles north of the city at Williamstown is the Fenton Art Glass Company factory with a store, factory tours and a museum that has Fenton glass and glass from many of the upper Ohio Valley manufacturers. Across the river from Parkersburg in Belpre, OH is the well known Lee Middletown Original Dolls Factory with museum store and factory tours on weekdays. Twelve miles North of Belpre is the picturesque riverboat town of Marietta, OH, the first permanent settlement in the Northwest Territory. The Campus Martius Museum of the Northwest Territory



is open daily, but both the Ohio River Museum and Toy and Doll museum are open only on Saturday and Sunday. In addition, on Saturday the Valley Gem 1840 has a fall foliage tour on the Muskingum River departing from Marietta. Both Parkersburg and Marietta have numerous antique stores, local craft stores and art galleries.

More information about visiting Parkersburg is available at [www.greaterparkersburg.com](http://www.greaterparkersburg.com). Information about Marietta is available at [www.mariettaohio.org](http://www.mariettaohio.org). Follow this link to view the complete convention registration form and flyer. [http://borhs.org/Events/2006\\_Convention\\_Flyer\\_Parkersburg\\_WV\\_v2.1.pdf](http://borhs.org/Events/2006_Convention_Flyer_Parkersburg_WV_v2.1.pdf).

---

## MODEL PRODUCT NEWS

### EDITOR NEEDED

#### **Speedwitch Media – HO Scale Baltimore & Ohio M-26d/e Duryea Underframe Conversion Kits (KC102)**

With 13,000 copies, the B&O M-26 was one of the single largest classes of freight cars of the Steam Era. Of the M-26 subclasses, 6,500 were constructed using the Duryea Cushioned underframe and classed as M-26d (car nos. 272500-277999 constructed between 1928 and 1930) and M-26e (car nos. 272500-277999 constructed in 1931.) Speedwitch offers two packages to replicate these numerous versions of the M-26 in either the early schemes or the schemes introduced in 1955 and later. Both include accurate decals and resin castings and options are offered with undecorated Red Caboose kits. All can be ordered via the web site ([www.speedwitch.com](http://www.speedwitch.com)).

---- Conversion Kit KC102A - Baltimore & Ohio M-26d/e box car early versions (1928-1955) - includes resin underframe and decals - \$20.00

---- Conversion Kit KC102B - Baltimore & Ohio M-26d/e box car late versions (1955-1960s incl. Timesaver and Sentinel schemes) - includes resin underframe and decals - \$22.00

---- Conversion Kit KC102XA - Baltimore & Ohio M-26d/e box car early versions (1928-1955) - includes undecorated Red Caboose ARA box car kit, resin underframe and decals - \$32.00

---- Conversion Kit KC102XB - Baltimore & Ohio M-26d/e box car late versions (1955-1960s incl. Timesaver and Sentinel schemes) - includes undecorated Red Caboose ARA box car kit, resin underframe and decals - \$34.00

Some Background:

---- Red Caboose offers a variety of ARA boxcar kits. These look like the common PRR X29 boxcar.

---- One alternate rivet variation conforms exactly to B&O M-26A appearance, and was once offered by the B&ORRHS as a custom painted kit in postwar Linking Thirteen States lettering. The Society sold-out its stock of over 500 models.

---- Their PRR X29 variation is also dead on correct for a B&O M-26B, right down to the rivets.

---- Red Caboose has also produced a later version with different truck centers, appropriate for the M-26D/E, but not tooled for the B&O Duryea underframe. These Speedwitch offerings fill that gap.

*Jim Mischke*

---

## DID YOU SEE IT?

**By Ross Pollock**

### **B&O Modeling Information Recently Appearing in the Press**

***How to Build Realistic Layouts***, (published Spring 2006 by Kalmbach with no cover date)

"3 Common Culverts" p38-43 includes complete instructions for making a small B&O stone walledculvert

"Grafton's D Tower" p66-69 photos and drawings of this brick tower with modeling notes

"Freight Yard Structures and Details" p 70-75 includes a photo of B&O train order office JN Tower

***Classic Trains***, Spring 2006

"B&O's Big Sixes" prototype article on B&O 2-10-2 s with photos and text. Ed Kirstatter noted a typo on page 75 mislabeling Class O (later DD) 0-6-6-0 "Old Maude" as an 0-8-8-0.

***Model Railroader***, March 2006 p 10-11 "News & Products" InterMountain Railway

Co. 1937 AAR Sentinel Service boxcar r-t-r 6 roadnumbers.

**Model Railroader**, March 2006 p 60-66 "8 Pike-Size Passenger Trains" Photo, consist and modeling notes for mid-1950s Pittsburgh-Buffalo trains 251 and 252.

**Railmodel Journal**, July, 2006, pages 11-17. "1935 A.A.R. Standard 50-ton Hopper in HO Scale from Kadee, Part I," by Ed Hawkins. Want to know why Kadee hasn't produced this exquisite (but pricey) car in B&O as one of the N-35, N-41 or N-44 subclasses? Well, Hawkins "wrote the book," (namely Railway Prototype Cyclopedias Vols. 1,2,4,8,9 and 13) so he should know. And in this comprehensive review of the prototype and the Kadee model, he tells us why, even including photos of the B&O cars on pages 15 and 16. The answer is underframe for some and the end vertical execution for all. As an incidental aside, Kadee hasn't signed CSX's licensing agreement. Of course the Athearn car's ends aren't right either. Contributed by *John Teichmoeller*.

---

## UPDATES AND ERRATA

Following last issue's article about modeling a Westerfield M-15e, Ken Van Mechelen offered some insights he has gained while completing five Westerfield M-15s (2 M-15d and 3 M-15e).

1. The instructions are in small type and contain alternate steps to cover multiple kit variations. I scanned mine, then corrected all the badly scanned words and edited out all the alternate steps. However, when I mentioned this to Al Westerfield, he said that if I emailed him, he would email me his electronic copy (I think it is a WordPerfect document) so I could edit it and print it in whatever size I wanted. Just edit out all the steps that don't apply to your kit. Microsoft Word will convert WordPerfect documents to Word documents.

2. The Westerfield web site ([www.westerfield.biz](http://www.westerfield.biz)) has copies of most of the pictures in the instructions. I downloaded them and enlarged some to get better resolution.

3. The instructions tell you to attach the side sills to the floor (step 16), then assemble the sides and ends (steps 17 and 18) and attach this assembly to the floor. After doing this and adding the roof truss, you detail the underframe. I found that a quite different sequence was easier:

a. Rather than just glue the brake staff to the end sill, I like to drill a hole in the end sill for the staff. Unfortunately, the small drills aren't long enough to drill down from the roof, so we need to drill the hole before assembling the car. In step 4, after drilling the hole for the brake staff support, lay the car end on the underframe, and use the brake staff support hole to position the drill for a hole through the end sill. Then enlarge the end sill hole to fit the brake staff. This allows the brake staff to fit into the end sill, a much stronger attachment.

b. Detail the underframe before attaching the car body. Basically do steps 23, 24, 25, 26, and 27 before attaching the floor to the body.

c. Make a jig to simplify getting the crossties and crossbearers (step 24) lined up and attached. I used 2 pieces of wood about 3" long and 1/2" thick. One was 3/4" high and notched to fit over the center and side sills. The other was 1/2" high. Both were drilled near the ends so metal screws and nuts could fasten them together. The underframe was sandwiched between them at the cross positions. This made it much easier to place, line up, and ACC the crossbearers and crossties in place.

d. Don't attach the side sills to the floor at step 16. Attach the body to the floor first. That way the body and floor fit better at the ends. I found that the floor was slightly narrower than the body, so I shimmed the body with some thin Evergreen strips. This avoids the concave side problem. After the body is attached to the floor, attach the side sills.

e. I found it very difficult (step 19) to sand the end sill top plate to fit on the end sill. It is extremely flexible and hard to sand evenly. I wound up cutting it too small (deliberately) then filling the gap with either Squadron Putty or ACC filler material. Adding the end sill top plate covers the hole we drilled in item a, so we need to redrill the brake staff hole up through the end sill top plate.

f. I found the roof truss assembly (step 20) to be a problem. The contour boards must be cut to exactly the right length to fit between the car sides. In some other Westerfield kits, the contour boards are just attached to the roof pieces, then the roof assembly is attached to the car. The contour boards can be cut shorter that way. I didn't try that approach, but may for future kits. For some cars, I used a piece of wood car roof material (probably Northeastern Scale Lumber) instead of the truss. For future kits, I may attach the roof assembly before the floor, so I can glue the roof from the inside.

g. It is difficult to cut the roof walk end supports at the exact length to wedge between the tabs on the end and the notch in the straps on the roof walk (step 23). Get some .01 x .02 plastic strips from Evergreen for use as roof walk supports. After the roof is attached, but before the roofwalk is attached, drill holes in the car ends just above the tabs. Use the roofwalk to judge the correct angle to drill the holes. After the roofwalk is attached, an overly long piece of the .01 x .02 strip is inserted in the hole and attached to the roofwalk. The excess length of the support is buried in the car end. I found that a #72 or # 73 drill worked. I was going to hide the hole with some putty, but after gluing the support in, I don't think I'll have to.

This approach can also be used for the brake platform diagonal supports (step 9).

h. Step 28, 29 -- I generally attach junk trucks (without wheels), just to protect the underframe and couplers, to allow the car to stand up. I attach the real trucks later (after painting).

---

## MODEL PRODUCT REVIEWS

### EDITOR NEEDED

#### HO Scale

##### **Accurail's Magnetic Coal Loads for Triple & Quad Hoppers.**

Accurail's latest release is their #303 Magnetic Coal Loads that drop into the Triple Hoppers recently added to their line of moderately price HO model cars. These plastic coal loads are like their previous production of loads for the USRA Twin Hoppers and the Athearn twin hopper models except that these fit their Triple hoppers and many Quad hoppers by other manufacturers. What they mean by Magnetic Coal Loads is that these loads can be easily be lifted out of the model without taking the cars from the track. To do this they furnish two steel balls that are pressed into the underside of each load. To remove the load you need only pass a magnet over the car, which is attracted to the two steel balls. They also sell a #300 LRM Load Removal Magnet tool. I tried this new load in an Athearn Quad hopper, which is a reasonably accurate model of the B&O W-2 classes. It dropped right in, but it is very loose both sideways as well as being not as long as the interior of the model car. This allows the load to sit lower in the body not giving you the look of a car fully loaded.

This is OK as I have seen cars like those that were not loaded right up to the top edges. On other cars you can adjust these loads lower by filing, sanding or grinding under the ends. I use a Dremel Belt/Disc machine. It makes fast work out of this. This load is also a drop in fit in the Stewart Triple hopper models, which are good B&O W-7 classes. These will also fit in the Bowser Quad hoppers thus giving you another load contour different from the one that comes with their models. These loads could be adapted to forty foot gondolas to add coal loads if desired. These loads are fairly good looking representations of coal straight from the box. For an even better looking coal load you can cement on real crushed coal of different sizes to represent different grades. I would suggest that you paint the plastic dummy load first with a dull black paint as I have found that the white glue that I use does not stick very well to plastic. These loads could also be used for stone loads by applying model ballast as above and lowering the load way down into the car.

*Edwin C. Kirstatter.*





---

## A MODERNIZED, STREAMLINED 10-1-2 FOR THE B&O

BY GREG LARocca

PHOTOS BY AUTHOR UNLESS OTHERWISE SPECIFIED.



### When Life Hands You Lemons, Make Lemonade.

Being the odd road out of the big three in the East, the B&O couldn't afford to re-equip its top trains with lightweight cars in the 1930's when the streamliner craze was in full swing; further, Daniel Willard was convinced that heavyweight, six-wheeled-trucked cars rode better and were more comfortable. (For excellent treatments on the impetus behind streamlining and the B&O's "making lemonade" see White and Pollock, listed in the references.) Thus, the railroad, as always, improvised, and "streamstyled" heavyweight cars for its top trains. Streamstyling consisted of modifying a heavyweight car to have the appearance of a lightweight by adding full skirting and hiding the vestibule steps, applying an arch roof, fitting full-width diaphragms, and painting in the then-new (and reserved for these rebuilt cars) blue, gray, and black paint scheme. Along with the exterior detailing, the interiors were modernized, and the cars all received air conditioning. In this article we look at modeling the class S-10c "Loch" series sleepers after being streamstyled. These words appear nowhere in the article, they need to go in the first paragraph, if not the first sentence, if not the title. Streamstyling, by the way, is not necessarily the railroad's term for this process, but is a term first coined (I believe) by Ross Pollock in his 1975 monograph on the *Capitol Limited*, and is a good term for describing both the cars appearance and the techniques used.

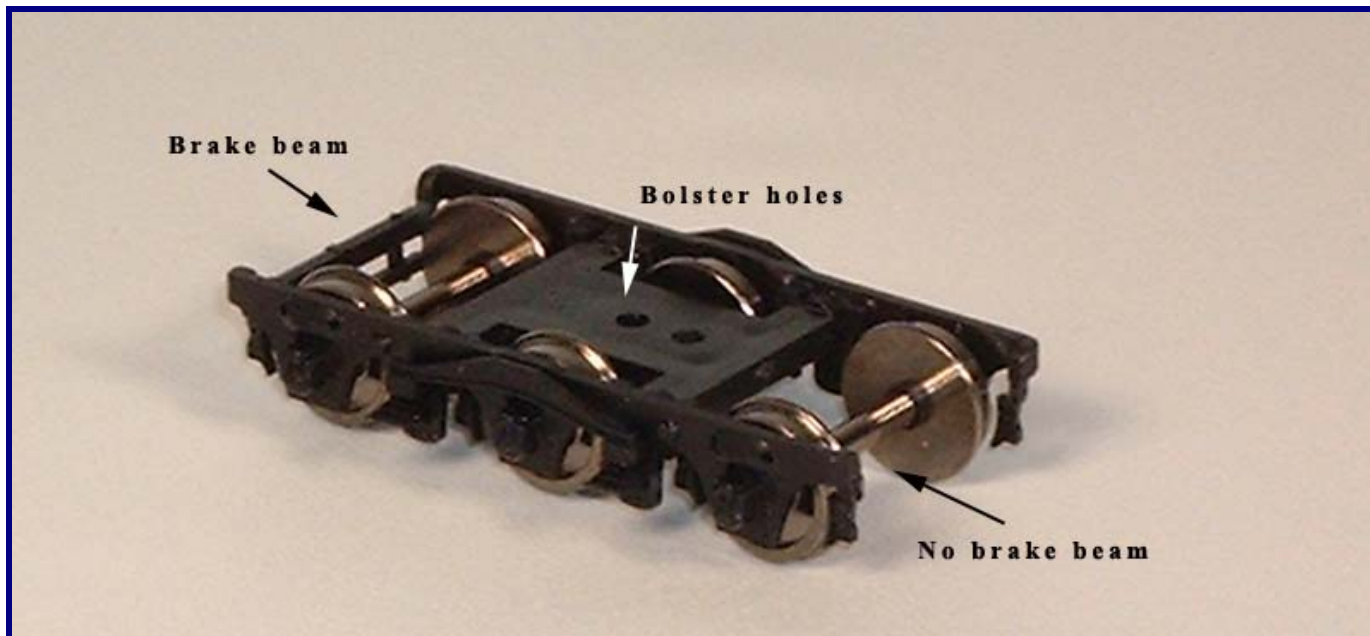
Over the years, both previously streamstyled cars, and newer applications of the process, lost the skirting and full-width diaphragms (both proved to be maintenance headaches), but kept the hidden vestibule steps and gained thermopane windows. The ultimate streamstyling was applied to, among others, two diners (1083 and 1084), a coffee-shoppe lounge car (1309), and the A-20b coaches (3576 to 3583), which had lowered roof lines, and were indistinguishable from lightweight cars save for their belt-rails and six-wheel trucks. From about mid-1956 to mid-1957, a group of 13 section-room and section-lounge cars were given a streamstyle treatment almost as radical; they kept their high roof lines for most of the length of the car, having it angle down toward the end to match the height of a lightweight car. The Pullman double section windows were replaced with wide single thermopane windows, with the other windows also receiving thermopane glass. Excellent pictures of cars modified this way appear in Bossler, and Davis and Roberts, and excellent drawings of another of these cars, *Lantern Tower*, appeared in the November, 1986 issue of *Mainline Modeler*.

### In the Beginning...

Branchline created their Pullman sleeper kits, and they botched it. As built out of the box, it is almost impossible to get them to run right, especially around curves. So, I am going to jump ahead of the actual order of construction of my car, and tell you what I did to make it run as good as it looks. These

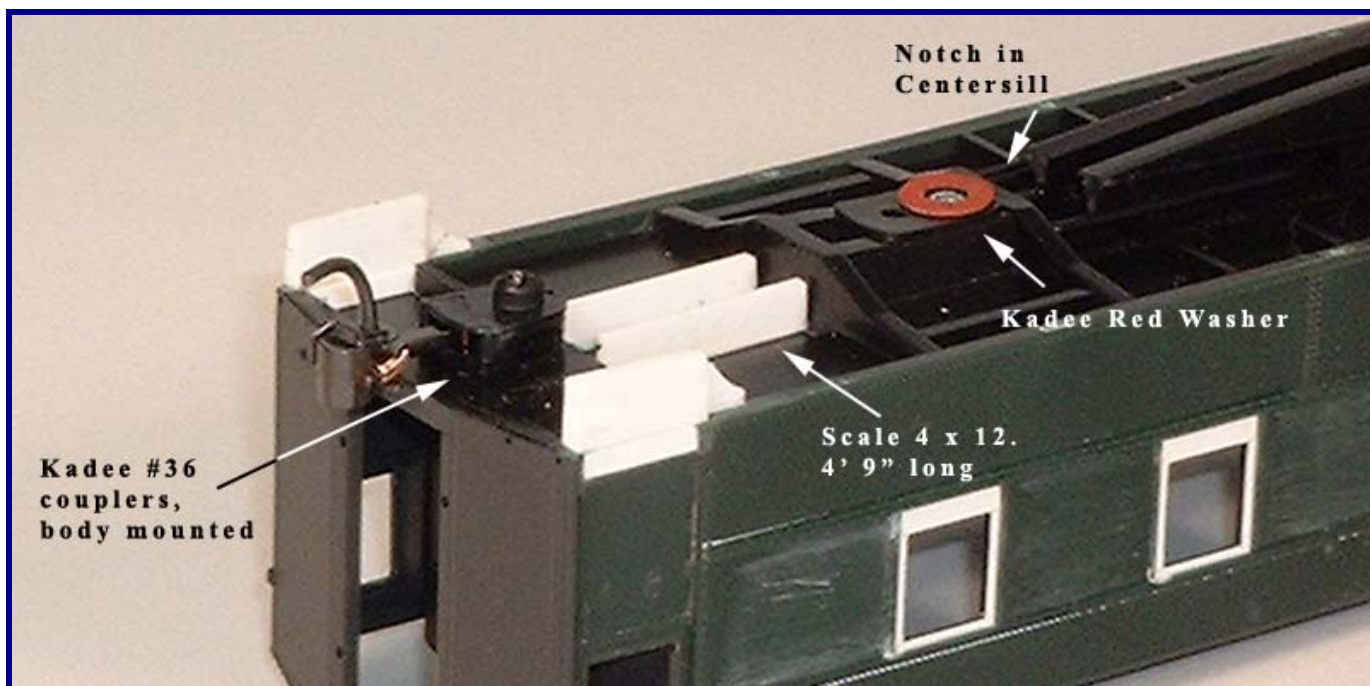
modifications can be done to *any* Branchline sleeper

to make it run well.



To start, when you assemble the trucks, leave off the rear brake beam, as it will rub against the center sill.

As shown in the photo above, this is the one closest to the truck bolster holes.

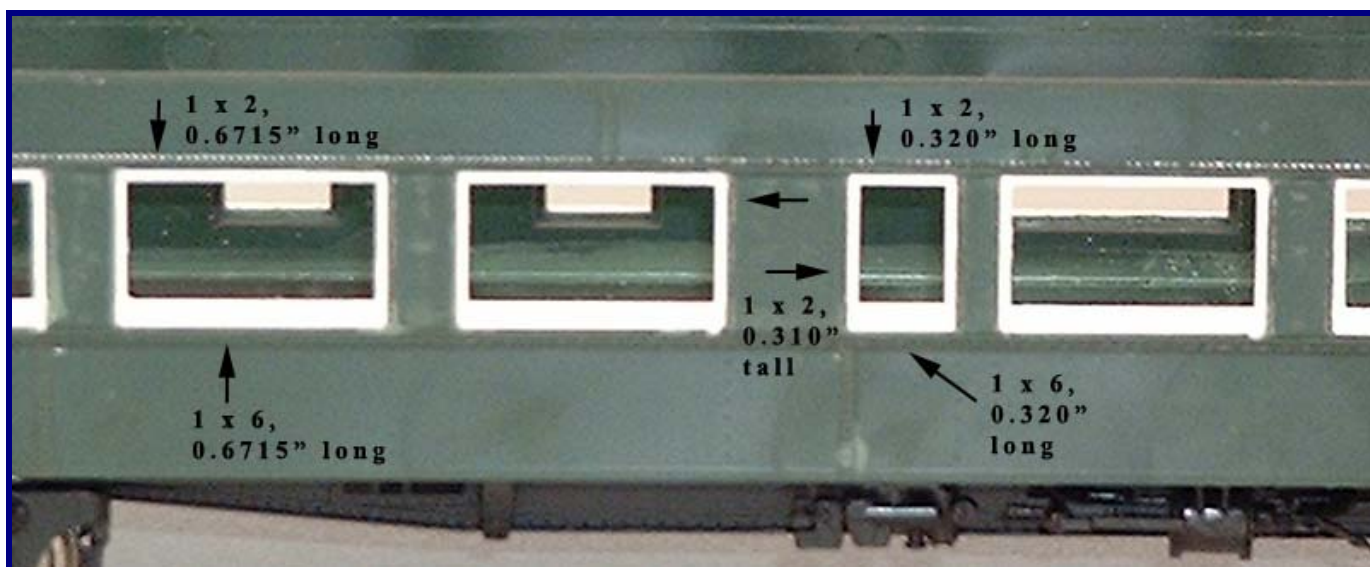


Next, turning to the underframe, make sure that the slots for the centersills are even where they meet the bolsters. On early models, the slots narrowed considerably, and have to be widened with an X-Acto knife, otherwise, the centersills won't seat properly, and interfere with the trucks even more. To Branchline's credit, they apparently have corrected this problem, since the last two Pullmans I have built

(in a paint scheme released some time after the one this car came in [see below]) did not have this problem. One give away is if the underframe is severely warped in the long direction; early models have this problem as well as the narrow slots. Other improvements are to notch the centersills about three scale feet from the bolster (again, later cars seem to not need this done), and, for all cars I have built, put

a Kadee red fiber washer between the truck and underframe bolsters. Finally, I body-mount Kadee #36 couplers instead of using the goofy coupler arm that Branchline supplies. The trick here is to offset the hole for the coupler box back towards the car's center a distance equal to the difference between a #5 shank and a #36 shank, e.g.,  $3/32"$ . This puts the head of the coupler at the same position as a body-mounted #5 would be, but puts the shank's pivot point further back, in effect shortening the car's length. One other thing I do is to fill in the space between the underframe bolster and coupler mounting pad with two pieces of scale 4 x 12, cut a scale 4' 9" long, in line with the centersills. The photo above shows these changes.

Let me also stay on my soapbox for a moment longer and offer a tip on building the stock, pre-painted sleepers. I have found it best to leave the window installation until last, right before installing the interior. I have everything else attached, and I spray the car with a coat of Floquil Flat Finish, which is not actually dead-flat, but is a semi-matte. This gives the car a nice, even sheen, covers any glue marks or smudges, and blends the trucks and other unpainted black plastic parts with the painted black parts. Finally, I glue the window glass in using Elmer's "Squeeze'N Caulk" thinned 50% with water. Lay the glass into position, dip a brush into the thinned glue, and touch to the edge of the glass. Capillary action will pull the glue into the joint, and, if any glue does get on the glass, it dries clear.



### And Now For Our Feature Attraction.

I started this conversion with Branchline #5228, Pullman "Lake Ontario," 2-tone gray with white lettering and Pullman Mechanical Air Conditioning. Note that it doesn't matter what roadname you start with, but it does matter what A/C system the model comes with, you don't want a car with ice bunkers or steam injector A/C. When you get your model home, carefully unpack the sides, and stick them in a container filled with denatured alcohol or 91% isopropyl alcohol. This will remove the paint with minimum fuss. I left mine in the alcohol for about an hour, and then scrubbed gently with a toothbrush under running water.

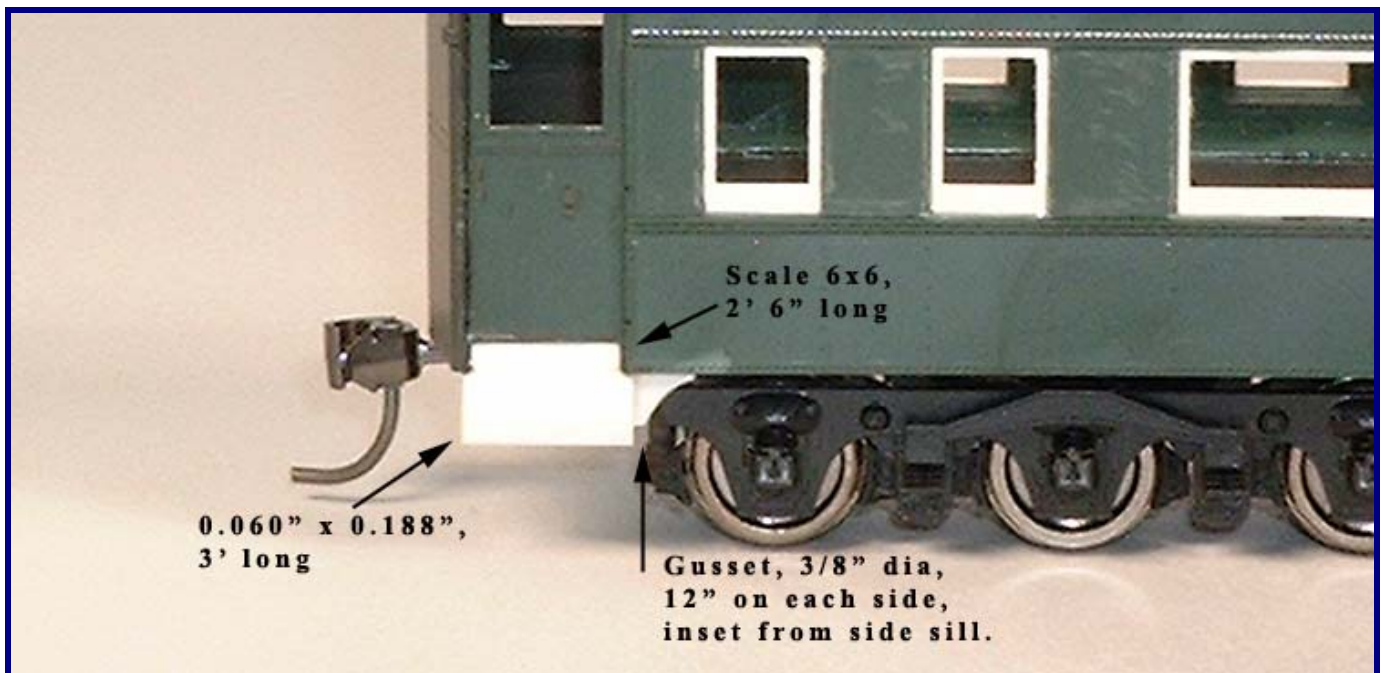
Next, assemble the sides onto the underframe/end unit. **DO NOT INSTALL THE WINDOW GLASS!** With a pair of flush cutters, remove the thin mullion between the Pullman double windows; also remove

the mullion in the vestibule windows. You'll probably have to finish up with a fine file and you definitely will have to remove the remaining section of each mullion with an X-Acto knife and a riffler file. Next, cut pieces of scale 1 x 2 to a length of 0.310", and glue these inside the vertical window frames of each window (except the vestibule windows). Next, cut scale 1 x 2 to a length of 0.210" for the top and bottom of the lavatory windows, 0.320" for the top frame of the Pullman single windows, and 0.6715" for the top frame of the Pullman double windows. Finally, cut scale 1 x 6 to a length of 0.320" for the bottom frame of the Pullman single windows and 0.6715" for the bottom of the Pullman double windows. I glued these pieces in place using a minimum amount of lacquer thinner, by the way. After the new frames are thoroughly dry, fill any gaps with "liquid styrene." This is made by taking any scraps of styrene you have, and dumping



them into a jar of lacquer thinner; once the plastic has dissolved, you apply the liquid styrene as you would any body putty. Allow this to dry, and then gently sand any visible imperfections with a fine sanding stick. While you are at it, also remove any rivets along the window strip. This technique gives a reasonable appearance. However, note that the windows should have rounded corners, something that is difficult to duplicate. Sometime back, *Model Railroader* published an article on scratchbuilding streamlined passenger cars where the author used Avery labels, cut into quarters and then reassembled to the correct size and in the right positions on a strip

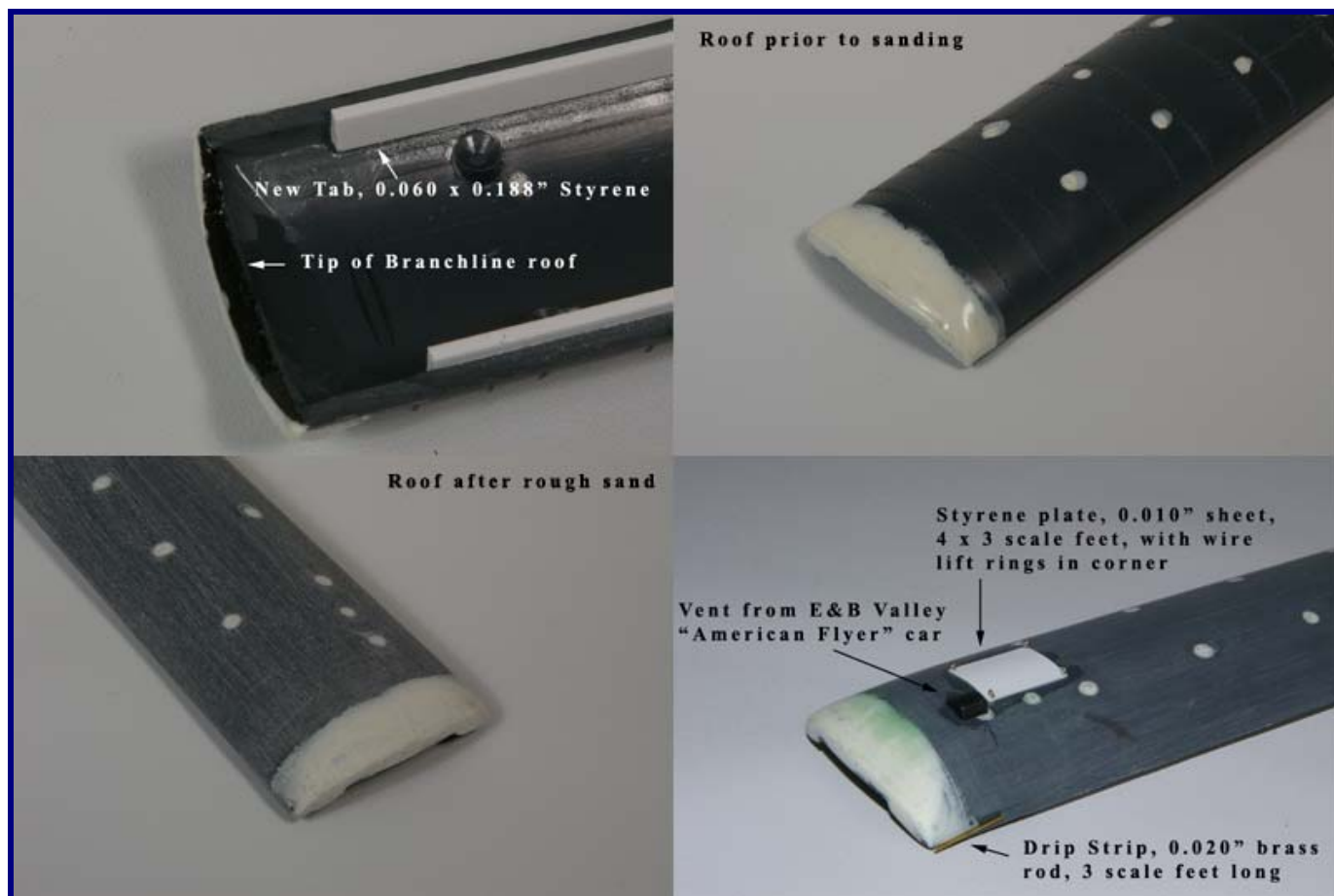
of clear styrene the length and width of the car's window strip. After spray-painting the exterior side (the side with the labels), they were removed, leaving clear areas with rounded corners duplicating the appearance of a streamliner's windows. I've always thought that this method is fraught with difficulties, not the least of which is that if any paint leaks under the label, it will ruin the effect. But, that is one way of duplicating rounded corners. Another would be to use slightly larger styrene strips to fill the window frames, then round the corners and remove the excess between rounded corners with a file.



### **The Hidden Staircase.**

I now changed the vestibules to have hidden steps by first gluing a piece of 2' 6" scale 6 x 6 immediately under the door. This was followed by a scale 3' long piece of 0.060" x 0.188" styrene strip. This piece was rounded with a file along its bottom length to match the prototype. Finally, I formed gussets by

first punching a 3/8" diameter hole in a piece of 0.020" thick styrene sheet, and then cutting out 12 x 12" pieces (e.g., 12" along the top and along the side the goes against the vestibule skirt). These were glued offset inwards against the inside edge of the side. This completes the body modifications.



### Raising the Roof.

Actually, we don't want to raise the roof so much as lower the ends (not to mention turn it from a clerestory to an arch roof). I used a pair of MDC Harriman Roofs. At the time of this writing, these are no longer available as separate parts, but there are lots of Harriman cars on eBay at reasonable prices, so this is one route for obtaining these parts. If anyone has other suggestions (such as shaping the roofs out of two pieces of shoe rail molding the way the late Bud Stringham did) *please* share your methods with *The B&O Modeler*; as you will see, using the MDC roof is a rather messy way to do this.

The first step is to cut off the tip of one end from each of the roofs; if you look at the end, you will see that there is a rivet strip right above the bottom of the end, and then a second rivet strip immediately above the first one. Use your razor saw to cut along this second rivet line. Next, cut the other end off of one of the roofs at the fourth rivet line from the end; e.g., where the roof begins to arch down. This is roof one. Also remove the tabs from the underside of both roofs at this time, cutting flush with the bottom of the sides. Now lay the roof one on the top of the car, with the shortened, rounded end matching the end of

the car. Lay the other roof with its shortened, rounded end even with the other end of the car, and mark where this second roof has to be cut to join to roof one to make a new roof which matches the car length. Join the two roof halves.

But wait, the fun is just beginning. Branchline chose to make a notched top on the car ends rather than a rounded one such as Rivarossi did. (Yes, I know it's prototypical—it just happens to make this conversion rather harder.) The intelligent thing to do would have been to cut some 0.020" to 0.030" styrene sheet to match this notch and glue it onto the new roof ends (making sure when cutting to length above to allow for this). However, I decided to be very, very clever and cut off the very ends of the Branchline roof and weld them onto the ends of the new MDC roof. This then necessitated much filling with liquid styrene. See the photo above. Also note on the underside view the pieces of 0.060" x 0.188 styrene strip attached to the inside of the roof as new mounting tabs.

The next step is to fill the holes in the MDC roof with liquid styrene. This too turned out to be a mistake as we shall see. When the liquid styrene is



THROUOUGHLY dry (I can't emphasize this enough), sand the entire roof with rough sandpaper, then with progressively finer grades of wet/dry sandpaper. Finally, when you have the roof as smooth as you possibly can, polish it using the end of your index finger and Crest Toothpaste. Crest Toothpaste?! Yes, indeed. Crest, I have been told by several dental professionals, is the most abrasive toothpaste in the known universe. At any rate, if you do this, you'll have a roof as smooth as a baby's behind.

I guessed on what the roof details should be like from what little can be seen in the prototype photos I used, since I didn't have a good photo or drawing of the roof. I made a 4 x 3 panel out of 0.010" styrene, and glued it centered on the roof, with its end even with the end lavatory window on the bedroom side of the car. Detail Associates wire lift rings were then added to each corner. A vent from an ancient E&B Valley "American Flyer" coach kit was added immediately in front of this, offset toward the bedroom side. Two more vents were added, one over the drawing room lavatory window, and one just to the left of the right vestibule door when looking at the bedroom side of the car. These two vents are longitudinally aligned with the first vent. Finally, drip strips were made from 3' long pieces of 0.020" brass rod. These were superglued on over each vestibule door, angled toward the car end. Except for painting, the roof was done, or so I thought.

### **Great Disasters in Model Railroading History!**

In the past, I've always covered my arch and turtle backed roofs with a single ply of tissue to represent a canvas roof. The tissue is attached by laying it on the roof and brushing it with lacquer thinner. Also, in the past, I've filled those &()\*^\*^(% ^ holes in the MDC roof with epoxy, by putting masking tape on the outside, and filling in each hole from the inside. Usually, there are bubbles and incomplete filling, but with the covering layer of tissue, this is not a problem. However, it is evident from the prototype photos I have that the roof is not canvas, so I didn't

want to go that route. Thus, I filled with the liquid styrene, waited a week or so, and then sanded. The roof was painted with a coat of Ditzler auto lacquer primer, then several coats of Polly-Scale Steam Power Black. I then put the roof aside while I finished the car. When I came back to the roof, I discovered to my horror that the filler in the holes was either not dry, or had been affected by the primer, and had shrunk. The roof looks as if it is the surface of the moon. Luckily, this doesn't show up too prominently in the pictures of the finished car, but, one of these days I am going to remove all the details from the roof, sand it to bare plastic, and yes, add tissue for a less than prototypical, but good looking, roof.

### **Finishing Up.**

Finishing the car is merely a matter of following Branchline's instructions, adding the underbody equipment and other details. Since I only had a photo of one side of *Loch Awe* (in Bossler) to work from, I decided to position the underbody equipment following Branchline's diagram, rather than trying to guess what the other side looked like. At least it's prototypical in the sense that it follows the layout used on some real cars, if not the arrangement used on this particular car. You will note from the photos that I did use the coupler yoke, but not the steam and air lines (they interfere with the couplers too much for my liking). I definitely used the safety chains, they are just plain nifty. I did leave those, along with the trucks, grabs, handrails, and diaphragms off until after painting. I used my standard of Polly-Scale B&O "Royal" Blue, E/L Gray, and Steam Power Black, and lettered with Champion Decals, including the car name (cut from the names in their Pullman car set). Although I didn't have a photo of *Loch Lomond*, I decided to name my car this rather than *Loch Awe* since I liked that name better. The car was finished with a coat of Floquil Flat Finish, the window glass installed, and weathered with a light wash of Polly-Scale Grimy Black thinned in water with several drops of detergent.



### Bill of Materials.

Branchline Trains 10-1-2 Pullman, with mechanical air conditioning

MDC/Roundhouse Harriman roofs (2 required)

Detail Associates #2206 Wire Lift Rings

Evergreen Styrene:

- 1 x 2 strip
- 1 x 6 strip
- 4 x 12 strip
- 6 x 6 strip
- 0.060" x 0.188" strip
- 0.010" sheet
- 0.020" sheet

Kadee #36 couplers

Bethlehem #16 Utility Roof Vents (substitute for ones I used from my scrap box)

0.020" diameter brass rod

Champ Decals

#PH-9D B&O Passenger Cars, dulux lettering

#S-54 1" HO Scale dulux stripes

#PH-1 Pullman passenger car lettering, dulux

Polly-Scale

B&O Royal Blue

E/L Gray

Steam Power Black

Grimy Black

Floquil Flat Finish

### References.

White, John H., Jr. *The American Railroad Passenger Car*. 1978. The Johns Hopkins University Press, Baltimore, Maryland.

Pollock, Ross E. "The Capitol Limited." *B&O Railroader*. July-August/September, 1975. Neilson Wood, Levittown, Pennsylvania.

Bossler, Craig T. *B&O Color Guide to Freight and Passenger Equipment*. 1996. Morning Sun Books, Inc., Edison, New Jersey.

Davis, Milton A. and Charles S. Roberts. *B&O Salute*. 1987. Barnard, Roberts & Co., Inc., Baltimore, Maryland.

Trager, George A. "Pullman Heavyweight Passenger Car. Rebuild for the B&O." *Mainline Modeler*. November, 1986. Hundman Publications.

---

## PROTOTYPE INFORMATION FOR THE 10-1-2 LOCH LOMOND

BY RAYMOND STERN

Loch Lomond was a 10 section, 1 drawing room, 2 compartment standard sleeper built by Pullman Car Company to plan 3585A as one of 24 cars in lot 4888 and first placed in service on 7/2/25. This car was one of seven identical cars in this lot built for service on The Capitol Limited. As built the car had 242A trucks, and schedule UC brakes with one 18" cylinder. It was outshopped on 5/15/34 after the addition of a York air conditioning system and associated roof ducts. It was again outshopped by Pullman's Calumet Shop on 6/11/40 as a plan 3585H car, after having been upgraded to betterment car specs for National Limited service. Those specific upgrades involved the installation of sheet metal to the roof to make the car appear streamlined, full body skirts, retractable steps, full width diaphragms, and upgraded interior lighting coupled with changing the faux wood on the interior to pastel color paint with aluminum and stainless trim to brighten up the car and give it the art deco-ish look then in vogue. Also at this time the brakes were updated to schedule UCB with two 16" brake cylinders. Finally, on 10/11/56 this car was outshopped for the last time, having been modernized. The modernization included the removal of the skirts between the trucks, replacement of the full width diaphragms with a narrow version, installation of the sealed thermopane windows, conversion of the trucks to roller bearings (type 242AR), and replacement of the York AC with Frigidaire AC equipment. The term applied by Pullman and B&O to this upgrade was that the car

was "modernized". (Streamstyling and turtleback are both railfan/model railroader terms.)

Pullman Company painting records indicate the car was first placed in service with Pullman green sides, black roof and underbody, and gold leaf lettering. The letterboard would have had PULLMAN centered on it. At the 1940 outshopping the car was painted to "B&O Streamline Colors" specs which had the blue and gray sides with a black underbody and black roof except for the gray stripe at the top of the sides. The letterboard would have had THE NATIONAL LIMITED at its center with a small PULLMAN at each end. On 8/24/56 Loch Lomond was released by Pullman painted to spec CEH3690L which was the traditional B&O blue and gray with completely black roof and underbody. The letterboard would have had BALTIMORE AND OHIO in the center and a small PULLMAN at each end. In all three paint schemes LOCH LOMOND would have been centered on the girder sheet. B&ORRHS has painting and lettering diagrams for both of the blue and gray schemes. The three photos below help display some of the details. The first is Poplar Slope which was rebuilt to betterment car specs at Calumet in the same general time frame as Loch Lomond. The purpose of this picture is to show the style of roof vents and the air conditioner roof access hatch. Three vents appear to be above the bedrooms, which would have had private toilets, and the fourth would be over a public toilet.



Location is Pennsylvania Station, Baltimore, MD, taken from the west side of the Charles Street overpass. Date, photographer, and source unknown.

The second picture is Loch Lomond after the 1956 modernization and shows the underbody details. This picture just happens to be the same side as the model picture which opens the article. The car is pictured from the ladies' restroom side and the windows from left to right are the ladies' toilet, ladies' dressing room/lounge, two compartments, drawing room, drawing room annex, five sections, and lastly a window in the aisle opposite the men's lavatory. The window with the aluminum frame is removable for use in handling passengers on stretchers and in case of an emergency. Again from left to right the underbody includes a steam trap, air tank, standby electric connection, Frigidaire AC

condenser, "poop" chute, air brake valve, air brake cylinder, water tank fill, Frigidaire AC compressor, battery box, another air tank, and finally another steam trap. On the side we can not see there should be another battery box (this car had two 8 cell boxes), another water fill or the water tank itself, another air tank (there should be three in total on this car; main for the brakes, auxiliary for the brakes, and one for the air pressure water system), another 16" brake cylinder, another standby electrical connection, and perhaps another steam trap. The two generators and maybe the water tank are body mounted on the center sill and not readily visible in this picture.

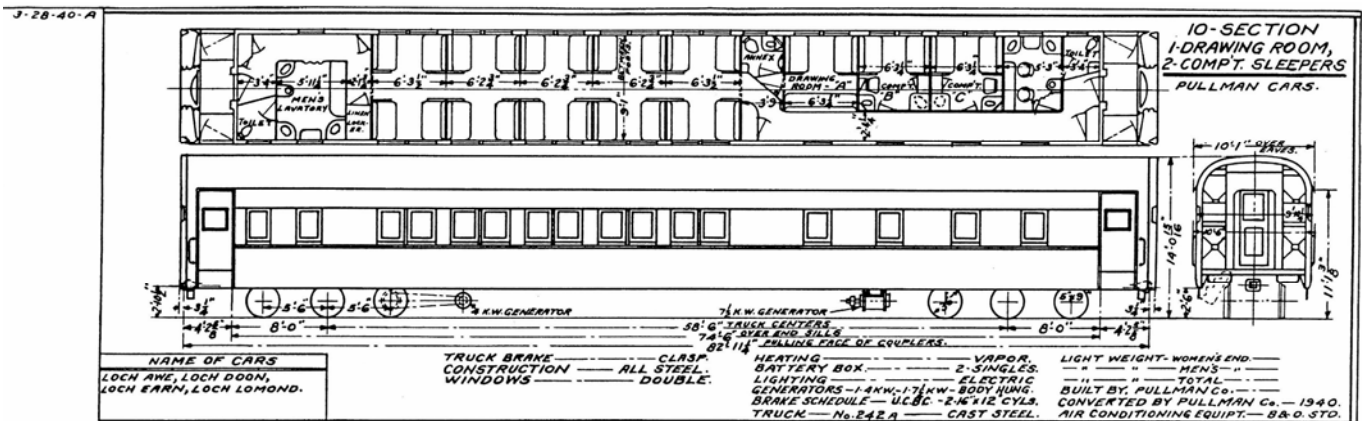


Pittsburgh, PA 9-26-65. Bob Rathke photo from George Elwood's Fallen Flags web site. ([www.rr-fallenflags.org](http://www.rr-fallenflags.org))





Lynchburg, VA on the Southern Railway early in the 1960's when the car was assigned to Southern Railway service. Photographer unknown, Bob's Photos Collection.



## References

The Baltimore and Ohio Railroad Equipment General Arrangement drawing, sometimes referred to as Clearance Diagrams, T66128, revision 6-6-51 D. This drawing covers S-10c sleepers; 7378 Loch Awe, 7379 Loch Doon, 7380 Loch Earn, and 7384 Loch Lomond.

The Pullman Project, Thomas C Madden, 2-27-05, Pullman Company Car Construction Records and Car Shopping Cards.

The Complete Roster of Heavyweight Pullman Cars, Robert J Wayner, 1985, Wayner Publications, New York, NY 10023.

---

# MODELING WEST CUMBO TOWER IN HO SCALE

BY JEFF HANKE

PHOTOS BY AUTHOR UNLESS OTHERWISE SPECIFIED.



## Introduction

In 1982 the CSX Corporation was already two years old, but the Chessie System and Seaboard Systems operations had not yet been merged. The old B&O still operated quasi-independently from its Chessie System partner, the C&O. West of Big Pool, the Western Maryland tracks had been abandoned, and WM tonnage got to Cumberland over the B&O via the connection at Miller, running across the legendary Magnolia Cutoff. There were still seven interlocking towers open in the 93 miles of track between Brunswick and Cumberland, MD. This section was known as the East End of the Cumberland Sub-Division. It not only had the most traffic in the Maryland Division, but the most on the entire B&O. Double tracked through its entire length, and triple tracked through portions, the East End required constant attention to manage the high volume of tonnage. It is this section of the B&O that is the subject of my model railroad.

Heading east out of Brunswick, a train would encounter the towers in the following order, Brunswick (WB), Martinsburg (NA), West Cumbo (W), Miller (R), Hancock (HO), Patterson Creek

(FN) and Mexico (M). Each of these towers was different architecturally and offer unique modeling challenges. I chose W as my first project since it does not fit in my current track plan and could serve as a test build without doing any harm to my home layout. I plan on modeling the other six as well.

## The Prototype

The West Cumbo (W) tower described in this article was built on the north side of the main lines in 1912, to replace the original tower that burned on February 17th of that year. West Cumbo was architecturally unique in that it had an interior spiral staircase and did not have the signature fish scale skirting between the first and second floors. These two features made it even more attractive to model first, since it is one of the simplest designs on the East End.

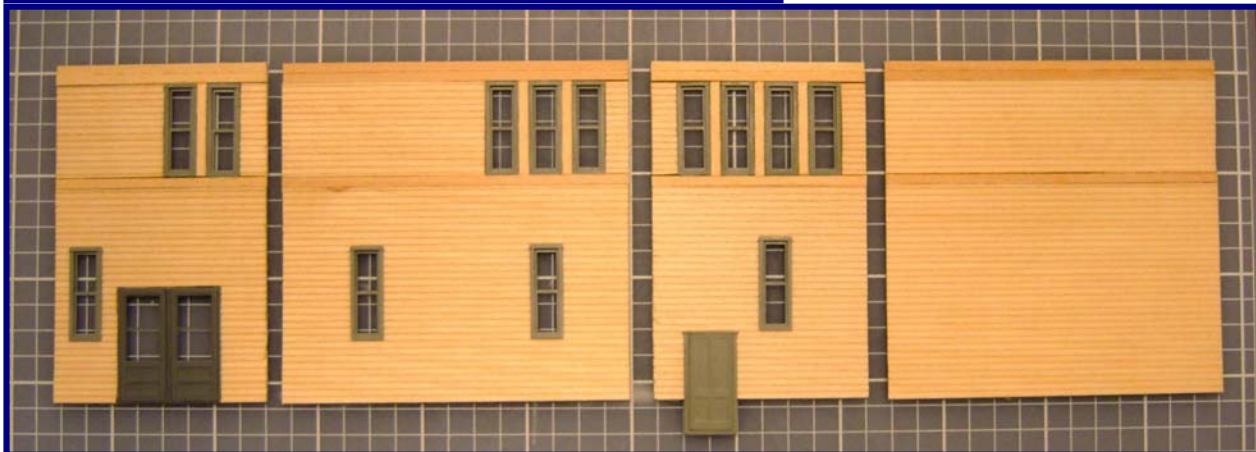
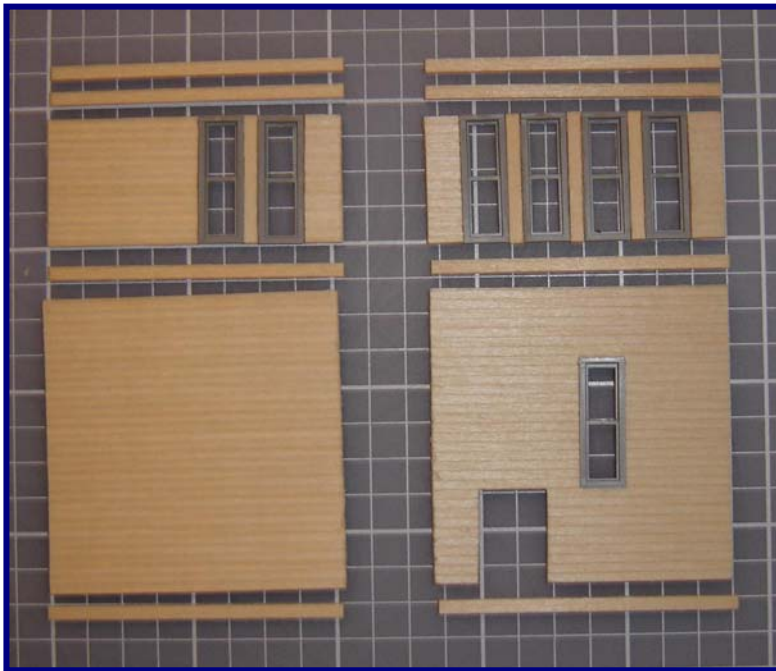
The tower was in operation from 1912 until 2000, when CSX closed and razed the building. West Cumbo tower oversaw the eastern split of the No. 4 Low Line around North Mountain. R tower oversaw the western split. West Cumbo was also the location of an interchange with the Cumberland Valley RR (subsequently the PRR, PC or CR).





Converted to HO scale this tower is 3 5/16" by 2 1/16" at the base. With plan in hand I went about cutting out the vertical pieces of the Grandt Line No. 5250 windows. These make for a very close approximation of the tower two pane windows. If anything, they are a little too narrow for B&O windows. Excellent windows can be found in the Alexander Interlocking Tower kit, but they have been out of production for years and are extremely difficult to find. The upper story windows on the prototype are not divided perfectly in half, but I did not correct the Grandt Line windows and live with the discrepancy.

I cut Northeast Scale Lumber 1/16" clapboard siding for the basic wall shapes and carefully placed the windows where appropriate. Where multiple windows sat next to each other, I placed 1/16" by 3/32" strip wood vertically between them. The tower has significant beams running between the two stories and right under the roof. These were made using the same sized strip wood. I glued all the individual sides together first with gel type Super Glue and later reinforced them with Elmer's wood glue.



To create the basic tower shape, I first sanded all the edges of the tower to a 45 degree angle. I did this with 200- and 400-grit sandpaper on sanding blocks. I glued all four sides together with Super Glue and

reinforced with wood glue. The second story floor was put in with sheet wood and glued in with wood glue.



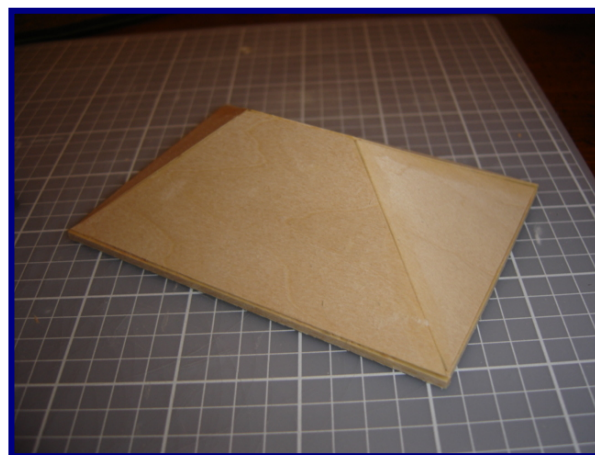
To better detail the tower for the Chessie era, I carved out the window detail on the two outer windows on the second story. This was easier than I thought it would be. A sharp X-ACTO blade made quick work of the soft plastic. I sanded the opening smooth with a small file and filled the hole with sheet wood. This step would not be necessary if one was modeling W as built. A 1950's era photo I had of the tower showed all four windows still intact.



I created a roof for the tower out of sheet wood. I estimated the size based on photos. It has a interior spine for strength and allowed for an easy place to glue the top pieces to. Additionally, I placed a 1/16" by 2/32" board around the edge to represent the eaves.



To accurately create the look of a well weathered tower with peeling paint, I next applied a wash of dark brown paint and black India ink. I made sure to concentrate the color where the darkest wood appeared on the photos I had of the tower. I also drybrushed on some Tamiya XF-19 Light Gray, that highlighted the weather beaten wood. This wash serves to stain the bare wood to an appropriate weathered gray appearance.



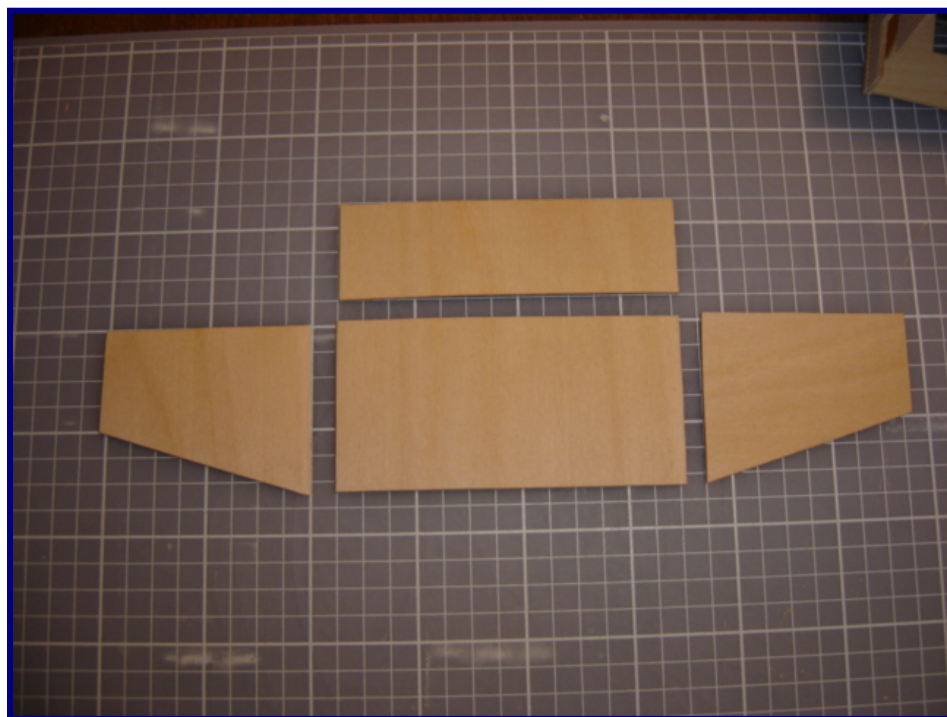
Once satisfied with the wash, I applied rubber cement over the areas I wanted to have bare wood show through. I applied it liberally where whole boards were bare and dry brushed it on the edges of the boards where I wanted some paint remaining. I used the same technique on the roof.





To mount W to the layout, my tower would need a foundation. I decided to mount it on the tower now, to give me something to hold on to during painting. I quickly measured the inside of the base of the building and used sheet wood to cut four sides for the foundation. Right before I mounted the foundation to the building, I noticed in a prototype photo that there was a small window in it on the single door side. I

cut a hole the size of the Grandt Line No. 5242 window and glued it to the back. I then mounted the Grandt Line No. 5058 door to the tower. I had to put some strip wood around the single door to have it sit on the foundation. When I was finally ready to mount the foundation, I sanded the edges to 45 degree angles and glued first with gel type Super Glue and reinforced with Elmer's wood glue.



Painting B&O towers has always been a challenge since the cream color is not readily available. I custom mixed my tower color by using Polly Scale

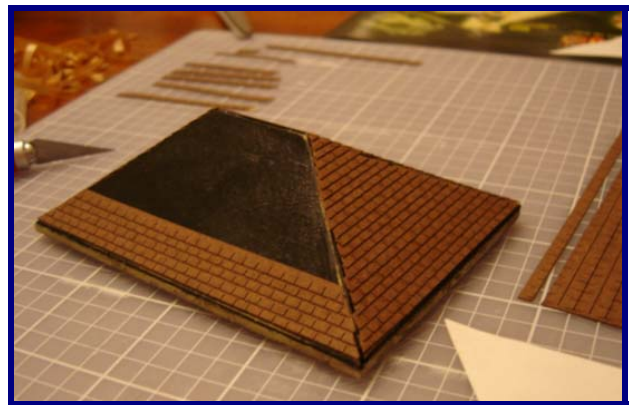
Reefer White, Aged Concrete, Tamiya Buff and Deck Tan. I am modeling the tower twenty years after it was painted, so this is a faded cream color. I actually

had to paint the tower three times. The first two sprays were too dark to my eye. Adding more and more reefer white finally lightened the tower to the shade that looked to match the prototype photos I had on hand.

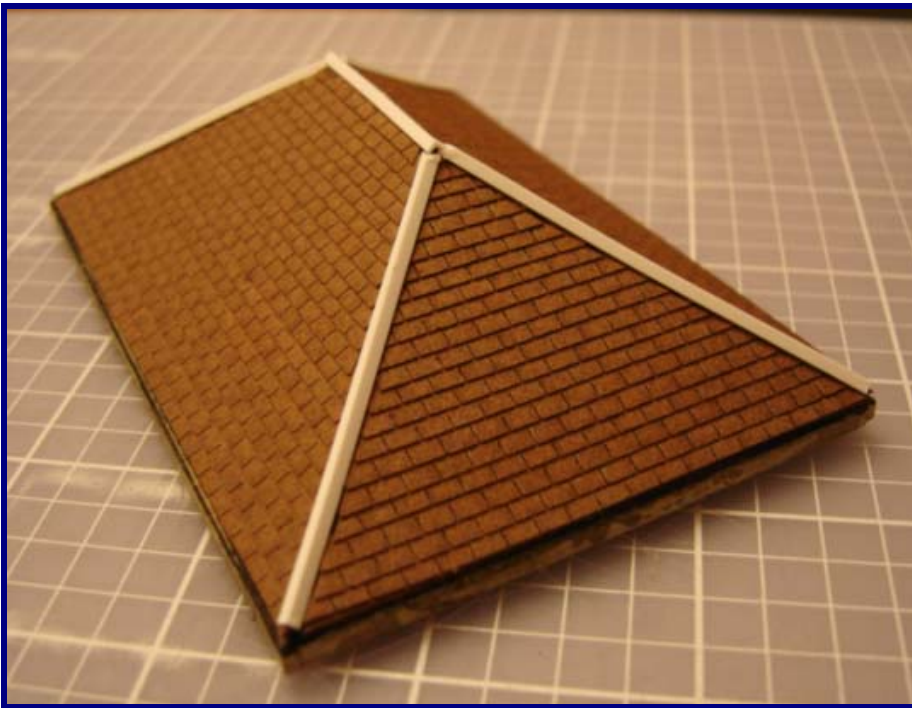


The next step is what really made this project come alive. Getting a proper simulation of the peeling paint on the tower was my biggest concern entering this project. Without a good effect the model would not be convincing. I lucked into an effective technique. On a whim I pulled a dull chisel blade lightly across the siding. The dull blade removed the rubber cement and gave a prototypical peeling paint look. One scrape peeled the paint in small splotches on the edge of the board. Several scrapes removed the paint completely. If unwashed wood showed through I either left it, to represent new peeling, or reapplied the wash to create a weathered look. I used the same technique on the eaves.

I painted the foundation with Tamiya Deck Tan with a brush and weathered it lightly with brown and white pastel chalks. I sealed the entire structure with two coats of Testors Dullcoat. At this point the tower is about done. I added the glazing to the windows by gluing sheet 0.010 clear sheet styrene to the back of each window and the double door. As there is no first story floor in my model, I painted the back of the window in the foundation black to prevent someone from being able to see through a first story window and out the foundation.



Next I focused on finishing the roof. The roof was painted with Polly Scale Engine Black and coated twice with gloss coat. I then applied Precision Lasercraft No. 2501 dark brown self adhesive shingles. These strips went on remarkably easy, but unfortunately do not come in black. Once I had covered the roof with shingles, I applied Evergreen .060 Angle No. 291 on the edges of the roof, as seen on the prototype. I scratch built two little decorative curves for the upper roof corners out of scrap wood. The last touch was to scratch build an antenna for the roof. It is made from brass wire rod held in place with Super Glue. I painted the roof Polly Scale Engine Black and the top of the antenna Tamiya Flat Aluminum.



The four final details add a lot to the finished appearance. First I added a “W” to the upper half of the two side windows closest to the track (one on each side). I just chose a “W” that looked right in Microsoft PowerPoint and printed it out in 6 pt font. Second I added the order board. The white board that is mounted between the windows on the second story track side, was made out of scrap styrene and painted black on the edge. The third detail was a small metal awning over the single door on the first story. It was clearly heavily rusted in every photo I had of the tower. I made it using .020 sheet styrene cut in two triangles and a rectangle. I painted it with Polly Scale Aged Concrete paint and rusted it with weathering powders in two rust shades. I mounted it to the structure with gel type Super Glue.

The final detail I added were the two landings on either side of the tower. These landings gave the tower operators access to the tracks. The single door side landing is mounted flush right into the ballast. The double door side is mounted where four stairs were needed to get down to the ballast. I made the landings with 2” x 8” scale lumber for the flooring of the landings. 1” x 4” scale lumber was used for the

hand rails. The landing on the single door side is  $\frac{3}{4}$ ” wide and 2” long. The double door side is  $\frac{3}{4}$ ” wide and 1  $\frac{1}{4}$ ” long. I noted that in a 1986 dated photo of the tower there was no hand rail on the stairs going down the double door side landing. I replicated this on my model. I painted both landings with Polly Scale engine black paint and used the chisel weathering technique. It worked even without rubber cement. Note in the photo below the weathering on the decking around the tower operator’s feet.

I mounted my tower on a little display base using typical foam carving, painting, and scenery techniques. I made sure to mount the tower at the proper height related to the tracks. From prototype photos the bottom wood board of the tower was approximately at track level.

For a first effort on scratch building, I am pleased with the results and will start on the other towers of the East End in the near future. When you master the basic skills of working with wood, the sky becomes the limit on the structures that you can put on your layout.





## **Materials**

### **Tower:**

#### **Northeast Scale Lumber:**

1/16" Clapboard (Siding)  
3/32" Angle (Corner covers)  
1/16" by 3/32" Strip Wood (Beams above and below  
2<sup>nd</sup> story windows and edge of roof)  
1/8" Board and Batten (Roof material and floors)  
2" x 8" Scale Lumber (Landings)  
2" x 4" Scale Lumber (Landing railings)

#### **Grandt Line Windows and Doors:**

No. 5250 Four Pane Window (Tower windows)  
No. 5242 (Basement window)  
No. 5058 (Single Door)  
No. 5059 (Double Door)

#### **Precision Lasercraft Self Adhesive Shingles:**

No 2501 Dark Brown (roof shingles)

#### **Evergreen Scale Models:**

No. 291 .060 Angle (roof cap angles)

#### **Polly Scale Paint:**

Engine Black  
Aged Concrete  
Reefer White

#### **Tamiya Paint:**

XF-55 Deck Tan (foundation and tower color)  
XF-10 Flat Brown (rust)  
XF-19 Light Grey (weathering)  
XF-57 Buff (tower color)  
XF-16 Flat Aluminum (antenna)

### **Scenery:**

1 inch Blue Foam Insulation Board  
Woodland Scenics Scenery Cement  
Woodland Scenics Fine Gray Ballast  
Woodland Scenics Dark, Medium and Light Green  
Static Flock  
Atlas Code 100 track  
Dark Brown Latex Paint  
Real dirt  
Stone Dust  
Krylon Flat Black Spray Paint  
Sheet Rock Plaster

### **Other materials and tools:**

Chopper II  
Elmer's Wood Glue  
Gel Type Super Glue (CA)  
Sharp X-ACTO knife  
Rubber cement  
200 and 400 grit sandpaper  
Small file  
Liquid Nails for Foam Projects

---

## **PLANNED FOR THE NEXT ISSUE**

### **A Color Guide for Painting B&O Model Structures**

### **Modeling B&O N-43 Covered Hoppers**

---

To subscribe, send an email to:

[bomodeler-subscribe@yahoogroups.com](mailto:bomodeler-subscribe@yahoogroups.com)

To unsubscribe send an email to:

[bomodeler-unsubscribe@yahoogroups.com](mailto:bomodeler-unsubscribe@yahoogroups.com)